CLAIMS:

1. A microactuator for use with a slider in a disc drive, a microactuator comprising:

a stator;

a rotor carrying the slider and movable with respect to the stator; and

a bumper system located on the stator and the rotor at a location where the rotor contacts the stator during seek operations.

2. The microactuator of claim 1 wherein the bumper system comprises a pliable material located on the stator.

3. The microactuator of claim 1 wherein the bumper system comprises a pliable material located on the rotor.

4. The microactuator of claim 1 and further comprising a gap between the stator and the rotor, wherein the gap is between about 1-15 microns.

5. The microactuator of claim 4 and further comprising integrated head connections allowing a direct connection from the rotor to the slider and a connections from the microactuator to a flex circuit at the stator.

6. The microactuator of claim 5 wherein the integrated head connections comprise vias on the rotor extending from a top surface of the rotor to a bottom surface of the rotor to allow a slider to be electrically connected to a bottom surface of the rotor.

7. The integrated head connections of claim 6 and further comprising embedded and surface wires routing the head connection from the vias on the top surface of the rotor to bond pads located on the stator.

8. The integrated head connections of claim 6 and further comprising a system of embedded and surface wires for forming an electrical connection to a coil on the rotor, and a piezoresistive sensor.

9. A microactuator having a reduced settling time, the microactuator comprising:

a stator;

a rotor connected to the stator using flexible beam springs;

a gap between the stator and the rotor, wherein the gap is small enough to ensure the microactuator has a rotor force greater than a product of deflection times a spring constant of the flexible beam springs during seek acceleration; and

a bumper system located between the stator and the rotor.

10. The microactuator of claim 9 wherein the bumper system comprises a pliable material located between the stator and the rotor.

11. The microactuator of claim 9 wherein the bumper system comprises an electrostatic bumper system configured to hold the rotor at a constant distance from the stator during seek operations.

12. The microactuator of claim 9 wherein the bumper system comprises a fluid air bearing between the rotor and stator.

13. The microactuator of claim 9 wherein the bumper system comprises a magnet system creating repulsive magnetic forces which minimize contact between the rotor and the stator during seek operations.

14. The microactuator of claim 9 and further comprising integrated head connections allowing an electrical connections to be made from the rotor to the slider and allowing electrical connections to be made from the stator to a flex circuit.

15. The microactuator of claim 14 wherein the integrated head connections comprise electrical vias extending through the rotor to connect the slider to the rotor.

16. The microactuator of claim 14 wherein the integrated head connections further comprise embedded and surface wires routing the head connections from the rotor to the stator.

17. The microactuator of claim 14 and further comprising a system of embedded and surface wires for forming an electrical connection to a coil on the rotor and a piezoelectric sensor on the stator.

18. A method of forming a magnetic microactuator having integrated head connections and a bumper system, the method comprising:

forming a piezoresistive sensors on a wafer;

performing an etch during which through wafer vias for the piezoresistive sensors are formed on the wafer;

performing an etch during which embedded wires, vias, and a bumper trench are etched;

applying an insulator;
filing the etched embedded wires and vias with a metal;
polishing a top side and a bottom side of the wafer;
depositing an insulator on a first side of the wafer;
etching a slider pedestal on a second side of the wafer;
depositing an insulator on a second side of the wafer;
etching electrical connections through the insulator and metal at the embedded wires;
depositing a metal to form electrical connections at the embedded wires;
beginning an etch of a seek bumper from a second side of the wafer;
etching a slider tub, a slider trench, and starting an etch of flexible beams from the second side of the wafer; and
completing an etch of the flexible beams from the first side of the wafer.

19. The method of claim 18 wherein applying an insulator comprising applying a layer of silicon nitride.

20. The method of claim 18 wherein filling the etched embedded wires and vias with a metal comprises filing the embedded wires with copper.

21. The method of claim 18 wherein polishing both sides of the wafer comprises performing a chemical mechanical polish.

22. The method of claim 18 wherein depositing a metal to form electrical connections comprises depositing gold.